



Published in final edited form as:

West J Nurs Res. 2009 April ; 31(3): 389–408. doi:10.1177/0193945908328262.

Grandmother Caregiving, Family Stress and Strain, and Depressive Symptoms

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According to the 2000 United States Census, 4.1 million, or 3.9 % of households include grandparents and grandchildren, and of these, 34% have no parent present. In nearly 91% of these families, the co-resident grandparent is a grandmother, and she, alone or with a spouse, heads the household (Simmons & Dye, 2003). A number of studies have examined the well-being of grandmother caregivers, and many have concluded that grandparents who are very involved in caregiving to grandchildren are at greater risk of depression and other health problems than their non-caregiving peers (Kelley, Whitley, Sipe, & Crofts Yorker, 2000; Fuller-Thomson & Minkler, 2001; Lee, Colditz, Berkman, & Kawachi, 2003). Although most related research has focused on grandparents raising grandchildren, studies of grandmothers in multigenerational homes and those providing extensive care to grandchildren suggest that these grandmothers also may face health risks, including depressive symptoms (Musil & Ahmad, 2002; Szinovacz, DeViney & Atkinson, 1999; Szinovacz & Davey, 2006). Many studies examining depressive symptoms focus on demographic and general health factors (Blustein, Chan, & Guanais, 2004; Fuller-Thomson & Minkler; Strawbridge, Wallhagen, Shema, & Kaplan, 1997), and while some studies have considered the relationship of family stresses to depressive symptoms (Goodman & Silverstein, 2006; Kelley et al.), few have considered whether coping skills and resources, such as resourcefulness and social support, could reduce or moderate the effects of family stresses and strains on mental health (Gerard, Landry-Meyer & Roe, 2006; Kelley et al.; Lumpkin, 2008; Musil & Ahmad; Pruchno & McKenney, 2002). Therefore, this study 1) examined family life stresses and strains affecting grandmothers, and 2) tested the moderating effects of resourcefulness and social support in the relationship between family stresses and strains with depressive symptoms in grandmothers as categorized by their caregiver status to grandchildren.

Grandchild Care and Grandmothers' Mental Health

Grandmothers raising grandchildren have been identified as having more depressive symptoms than their peers. Secondary analysis of the National Survey of Families and Households (NSFH) (Minkler, Fuller-Thomson, Miller, & Driver, 1997) showed that grandparents who were a child's primary caregivers for at least 6 months reported more depressive symptoms both before and after initiating caregiving than grandparents who never raised a grandchild. Alameda County (Strawbridge, Wallhagen, Shema, & Kaplan, 1997) and Health and Retirement Study (HRS) data (Blustein et al., 2004) also showed that grandparents, especially unmarried grandmothers of color who are raising grandchildren without parents in the home, report higher depressive symptoms. However, Hughes, Waite, LaPierre, & Luo (2007) found that while such grandmothers reported more depressive symptoms, this effect disappeared when controlling for demographics and prior depression, raising a question of what contributes to initial elevated depressive symptom levels. Secondary analyses of large data sets, such as the NSFH or HRS, usually lack information about specific family stresses and strains and cannot highlight potentially modifiable factors associated with better mental health for grandmothers.

The effects of caregiving to grandchildren may not be limited to grandmothers in the primary caregiver role. Grandmothers living with adult children and grandchildren in multigenerational homes report more depressive symptoms than non-caregivers, but less than custodial caregiver grandmothers (Hughes et al., 2007; Musil & Ahmad, 2002). Continued co-residence of grandchildren and their parent(s) is associated with more depressive symptoms in grandmothers (Szinovacz et al., 1999), especially among retired women (Szinovacz & Davey, 2006). These findings suggest a need for further examination of the effects of such caregiving and of factors that could moderate the effects of family stresses and strains on mental health.

Demographic factors influence the likelihood of grandmother caregiving and the effects of caregiving on health. Co-residence with grandchildren and the grandchildren's parents is more common among grandmothers who are unmarried or of color (Simmons & Dye, 2003). Although Pruchno and McKenney (2002) found no differences between African American and white custodial grandmothers in depressive symptoms, African American grandmothers in multigenerational homes were found to have more depressive symptoms than either African American primary caregivers to grandchildren (Goodman & Silverstein, 2002) or white grandmothers in multigenerational homes (Schweingruber & Kalil, 2000). In addition, married, older and employed grandmother caregivers have fewer depressive symptoms (Blustein et al., 2004; Hughes et al., 2007; Sands & Goldberg-Glen, 1998; Szinovacz et al., 2006).

Grandmother caregiving, family life stresses, and depressive symptoms

Family life stresses also contribute to grandmothers' caregiving roles to grandchildren. Grandmothers raising grandchildren become the primary caregivers when parents are unable to raise their children, usually because of their substance abuse, incarceration, health problems, or death. Although grandmothers sometimes assume primary caregiving for a defined time frame, such as during a parent's incarceration or military deployment, others do so long-term and eventually seek to adopt or obtain permanent custody of the grandchild; however, in many cases, the primary caregiving arrangement is informal and indefinite (Butler & Zakori, 2005). For grandmothers in multigenerational homes, the co-residence of multiple generations may occur when a teen or adult child has a baby, or when health problems, divorce, or job loss, usually in the adult child (parent) generation, prompts the multigenerational living arrangement (Musil & Ahmad; Pruchno & McKenney, 2002). In most multigenerational homes, the grandmother, with/without a spouse, heads the household (Choi, 2003). Grandmothers in multigenerational households sometimes transition out of their co-parenting role (Standing, Musil, & Warner, 2007) when family circumstances change, e.g., the co-residing adult child marries and moves out with the grandchildren. Grandmothers who do not co-reside with grandchildren experience different, and perhaps fewer, family stresses and strains; as a result, they may be at less risk for depressive symptoms (Musil & Standing, 2005).

There is considerable literature that describes family life stresses of grandmother caregivers and the impact of these on mental health. Grandchild health problems and difficulties in the parenting or grandparent roles are frequently identified as contributing to perceptions of stress among grandmothers raising grandchildren and those in multigenerational homes (Bachman & Chase-Lansdale 2005; Gerard et al., 2006; Kelley et al., 2000; Lumpkin, 2008; & Goldberg-Glen, 2000). Difficult family relationships, conflict between grandparents and parents, and emotional distance are strains reported in these families (Goodman & Silverstein, 2002; Leder, Grinstead, & Torres, 2007; Musil & Standing, 2005). More negative family life events and family strain contribute to less reward and perceptions of worse family functioning (Musil, Warner, Zauszniewski, Jeanblanc, & Kercher, 2006), and have been associated with more depressive symptoms among grandmother caregivers (Hughes et al., 2007; Leder, et al.; Musil & Ahmad, 2002; Sands & Goldberg-Glen, 1998).

Resourcefulness and Support

When examining the relationship between stress and mental health outcomes, some studies have considered the main and moderating effects of resources such as social support (Gerard et al., 2006), but, as noted by Lumpkin (2008), few have considered the effects of coping skills in grandmothers. Learned resourcefulness is a repertoire of cognitive-behavioral skills for coping with adversity (Rosenbaum, 1990; Zauszniewski, 1997, 2006). It has been examined in caregivers to children, older adults and the seriously mentally ill, and is related to better adaptive functioning, health behaviors, and quality of life, and to less burden and depression (Picot, Zauszniewski, & Delgado, 1997; Zauszniewski, Bekhet, & Suresky, 2008; Zauszniewski, Chung, Chang, & Krafcik, 2002). Work in the area of resourcefulness has shown no differences in overall resourcefulness between grandmothers by caregiver status, although greater resourcefulness contributed to better family functioning for grandmothers raising grandchildren and those in multigenerational homes (Musil et al., 2006). Resourcefulness, by bolstering one's capacity to deal with stresses, could reduce depressive symptoms and also moderate the effects of family life stress on grandmothers' depressive symptoms, as active coping strategies have been found to do (Musil & Ahmad, 2002).

Social support has been more widely studied among grandparent caregivers (Gerard et al., 2006). Grandmothers in multigenerational homes reported more instrumental support than primary and non-caregivers, but less subjective support than non-caregivers (Musil & Ahmad, 2002). Social support, both formal and informal (Gerard et al.) and instrumental and subjective (Musil & Ahmad) is associated with better mental health among grandmothers, especially those who are primary or multigenerational caregivers (Bachman & Chase-Lansdale, 2005; Burnette, 2000; Hughes et al., 2007; Kelley et al., 2000; Sands & Goldberg-Glen, 2000). Social support has been found to moderate the effect of stressful life events on depression among caregivers to older adults (Chou & Chi, 2002), but few researchers have tested the moderating effects of support on the stress-depression relationship in this population. Higher levels of subjective and instrumental support could have both main and moderating effects on the relationship between family life stress and strain and depressive symptoms. During periods of high intra-family strain or stressful family life events, the availability of others who provide instrumental support by actively helping and relieving burden or who give subjective support by encouragement and companionship, could buffer the effects of such stress and strain.

Study model

This study drew on the Resiliency Model of Family Stress, Adjustment and Adaptation, (McCubbin, Thompson, & McCubbin, 1996) to conceptualize how the demands placed upon the family system might influence the mental health of grandmother caregivers. The Resiliency Model considers how family demands (family life stresses and intra-family strains) produce change in the family system and how resources, such as social support, and problem-solving/coping skills, such as resourcefulness, affect individual or family adaptation and well-being, (e.g., physical and mental health). The major thesis of the model is that family demands, if not reduced or moderated by resources and problem-solving/coping, may increase the possibility of emotional or other problems. The model has been used in research on families facing various health and situational crises (Leske, 2003; Svavardottir, McCubbin, & Kane, 2000; Tak & McCubbin, 2002).

This report focuses on the mental health of grandmothers grouped by their caregiving status to grandchildren. We examined family life stresses and strains across caregiving groups and whether resourcefulness and support reduced depressive symptoms and moderated the effects of stress on such symptoms; we focused on resourcefulness and support due to their potential for guiding interventions. Demographic factors of race, marital status, education, and age were incorporated in the model due to their associations with grandmother caregiving status, family

life stresses and depressive symptoms (Hughes et al., 2007). Grandmothers who were unmarried, older, not employed, and women of color were expected to report more depressive symptoms. We hypothesized that primary caregiver grandmothers would have the most family stresses and depressive symptoms, and non-caregivers to grandchildren the least. We further expected 1) a positive relationship between family life stresses and strains with depressive symptoms, and 2) that greater social support and resourcefulness would reduce the effects of stresses on depressive symptoms across all groups (Musil & Ahmad, 2002). We expected moderating effects of subjective support and resourcefulness across all groups and of instrumental support for primary and non-caregivers, who report less available instrumental help.

Methods

Sample

The study reported here is the first wave of a longitudinal study of grandmothers as caregivers to youth. Women were eligible if they had at least one grandchild under 16 years old and could be assigned to one of the three caregiving groups: primary, multigenerational or non-caregiver. Primary caregiver grandmothers had responsibility for raising their grandchildren without parents living in the home. Multigenerational grandmothers lived in a home with one or more grandchildren and the grandchild(ren)'s parent(s). Non-caregiver grandmothers did not live with or provide regular babysitting for grandchildren, but lived within 1 hour or 50 miles of grandchildren and had an ongoing relationship with them.

Potential subjects were recruited by random digit dialing (RDD) conducted by a university-affiliated survey research center that screened 15,456 households to identify grandmothers across Ohio who fit the three caregiver groups. The survey center provided names and telephone numbers of potential participants, who were then screened by telephone to determine eligibility. We spoke with 613 RDD-identified grandmothers, 527 agreed to participate, and 366 completed questionnaires for a response rate of 69%. We supplemented recruitment of primary caregiver grandmothers by using snowball sampling and by mailing information letters to members of a statewide grandparent/kinship coalition, which yielded 141 additional potential participants, and 123 completed questionnaires. Thus, 75% of the total sample was obtained by RDD and 25% by convenience methods; 100% of non-caregiver grandmothers and 93% of multigenerational and 39% of primary caregivers were recruited through RDD. The overall response rate was 73%, consistent with other studies using mailed surveys (Dillman, 2000). Three questionnaires were eliminated due to ineligibility or missing data. The final sample included 183 primary, 136 multigenerational and 167 non-caregiver grandmothers from 71 of the 88 Ohio counties.

Grandmothers were mailed an informed consent, a questionnaire, and a stamped return envelope. Two-week reminder postcards, a 4-week replacement packet, and a 10-week reminder postcard were sent, if needed. Participants received a \$15.00 incentive upon questionnaire return.

Measures

To measure the family life stresses and strains experienced by the grandmother and her family in the past year, we used a modified version of the Family Inventory of Life Events (FILE; McCubbin, Patterson & Wilson, 1983). The FILE was modified similarly to that of Peterson & Christiansen (2002) to include 31 dichotomous questions from 7 of 9 subscales (intra-family strain/conflict, financial strain, work-family transitions, illness and family care strains, loss, pregnancy/childbearing strains, and family legal issues), which reflect relevant life stresses frequently reported by grandmothers (Musil & Standing, 2005; Sands & Goldberg-Glen,

2000). Respondents indicated whether or not specific changes occurred in their family during the prior 12 months. Internal consistency reliability for the original 71 FILE items is $\alpha = .81$ (McCubbin et al.) and reliability for the 31 items used in this study was $\alpha = .81$.

A single FILE summary score is typically used due to low internal consistencies of some subscales, however our interest in specifying life stresses led to using two analytic approaches. We used 1) the 7 subscale scores to examine differences in family life stresses and strains across the three groups, and 2) two subscales for the regression analyses: the intra-family strains subscale (11 items, $\alpha = .78$) and a summary score comprising the remaining six family life stresses (20 items, $\alpha = .69$) to examine the effect of these on depressive symptoms. Examples of subscale items and alpha reliabilities in our sample and as reported by McCubbin, Thompson & McCubbin (1996) are: Intra-family strain (11 items, e.g., “increase in conflict among children,” “increased difficulty in managing children,” “increased disagreement about a family member’s friend(s) or activities,” and “a family member appeared to depend on alcohol or drugs,” $\alpha = .78$ [$\alpha = .72$ by McCubbin et al.]); Financial strains (2 items, “increased strain on family money for medical and dental expenses,” and “increasing debts due to overuse of credit cards,” $\alpha = .53$ [$\alpha = .60$ by McCubbin et al.]); Work-family transitions (6 items, e.g. “a member lost or quit a job,” “a member started or returned to work,” “family moved to a new home,” $\alpha = .58$ [$\alpha = .55$ by McCubbin et al.]); Illness and family care strains (4 items, e.g. “child became seriously ill or injured,” “increased difficulty managing a chronically ill or disabled member” $\alpha = .56$ [$\alpha = .56$ by McCubbin et al.]); and Family legal troubles (4 items, “incidents of physical abuse or aggression,” “a member went to jail or juvenile detention,” and “a member dropped out of school or was suspended,” $\alpha = .46$ [$\alpha = .62$ by McCubbin et al.]), Pregnancy strains (1 item, “a teenager became pregnant”), and loss (“married son or daughter was divorced or separated,” “child died,” “other family or close friend died,” $\alpha = .17$ [$\alpha = .34$ by McCubbin et al.]). Discriminant validity has been reported for the total scale and the intra-family strain and work-family transitions subscales in high and low conflict families (McCubbin et al.).

Resourcefulness was measured by a 25-item reduced version of the Self-Control Schedule (SCS) (Rosenbaum, 1990; Zauszniewski, 1997; Zauszniewski, Lai, & Tithiphontumrong, 2007). This modified version of Rosenbaum’s (1990) original 36-item Self-Control Schedule (SCS) was used in order to minimize response burden in this study. The 25-item scale was developed in an earlier psychometric study (Zauszniewski, 1997) and was found to capture Rosenbaum’s three hypothesized dimensions of resourcefulness: reformative self-control, redressive self-control, and perceived self-regulatory efficacy. On the SCS, participants indicate the degree to which each item describes their behavior, ranging from (5) “Always like me” to (0) “Not at all like me.” Scores range from 0 to 125; a higher composite score, after reverse scoring seven negatively phrased items, indicates greater resourcefulness. Rosenbaum (1990) recommends using the SCS as a summary score to reflect the construct of resourcefulness rather than using the subscales, and the selection of the 25 items that best represented the three factors preserved the meaningful dimensionality of the construct. The 25 item reduced SCS was correlated .97 with the 36 item version (Zauszniewski, 1997). The alpha reliability of the 25 item instrument was .75 in a sample of healthy community-dwelling elders (Zauszniewski, 1997) and was .81 in this sample.

Social support was assessed with two scales from the Duke Social Support Index (Hughes, Blazer & Hybels, 1990) reflecting subjective and instrumental dimensions of support. The instrumental support subscale ($\alpha = .83$) includes 12 dichotomous items, such as “Do family and friends help out when you are sick?” and “Do they shop or run errands for you?” which were summed to form a composite scale, with a 0–12 range. Subjective support was measured by 7 questions about feelings of support and involvement with family and friends. Participants responded to questions such as, “Do you feel you have a definite role in family and among

friends?” and “Does it seem that your family and friends understand you?” using a scale from 0 (hardly ever) to 2 (most of the time). Subjective support ($\alpha = .85$) scores range from 0 to 14.

Depressive symptoms were evaluated using the 20-item Center for Epidemiological Studies-Depression Scale (CES-D; Radloff, 1977). The CES-D measures depressive symptoms on a 4-point (0–3) scale, with scores of 16 and higher indicating increased risk of clinical depression. The CES-D has excellent reliability (reported $\alpha = .81$; sample $\alpha = .81$) and validity.

Demographic variables included race (white = 1, and women of color = 0); marital status (married/living with a partner = 1, not married [divorced, separated, widowed, never married] = 0); age in years, and work status (employed 1, not employed = 0).

Analysis Procedures

We compared the three groups' scores on study variables using chi-square, analysis of variance (ANOVA), or multiple ANOVA. To test the main effects of resourcefulness and support, we used hierarchical regression and regressed depressive symptoms on the intra-family strain and family life stresses subscales, followed by subjective and instrumental support and resourcefulness, then demographics, for each caregiver group and for the full sample. Next, we tested if support and resourcefulness moderated the relationships between 1) intra-family strain and 2) family life stresses with depressive symptoms. We centered the moderator variables using z scores, created product terms, and introduced the six possible moderators (resourcefulness X intra-family strain, resourcefulness X family life stresses, etc.) as a block, following recommendations of Frazier, Tix and Barron (2004). Power, calculated using G*Power 3 (Faul, Erdfelder, Lang, & Buchner, 2007), was estimated to be $>.99$ for the omnibus regression with an expected R^2 of .30, 9 predictors (main and control variables), $\alpha = .05$ and $n=136$, the sample size of the smallest group. With the addition of six moderating variables in a block, power to detect a .05 increase in R^2 (Musil & Ahmad, 2002), was estimated as ranging between .99 for the full sample to .70 for $n=136$.

Results

Study participants

Grandmothers ranged in age from 31 to 87 years ($M = 57.1$, $SD = 10.1$); 54.9% were married or living with a partner. Grandmothers were raising grandchildren due to parents' abandonment, neglect, or abuse of grandchildren (35.5%); substance abuse (15.6%); marital disruptions or family conflicts (11.4%); work, school or military duty (9.9%); need of financial or general help (9.7%); incarceration (7.8%); mental or physical illness or disability (6.7%); death (3.8%). Nearly 60% of grandmothers in multigenerational homes babysat or supervised grandchildren, and 83.5% rented or owned the home. Non-caregiver grandmothers had varying degrees of in-person, phone, or e-mail contact with their grandchildren. Grandmothers had an average of 3.3 grandchildren ($SD = 3.6$), ranging in age from 1 month to 16 years.

Two-thirds of grandmothers (66%) identified their race as Caucasian, and 34% were women of color (30% African American, 0.4% American Indian or Alaskan Native, 0.2% Native Hawaiian or Pacific Islander, and 2.5% multi-racial); 3% reported Hispanic or Latino origins. By group, 42% of primary, 34% of multigenerational and 26% of non-caregiver grandmothers were women of color ($F=10.1$, $p<.01$). Multigenerational home grandmothers were younger ($F=8.2$, $p<.001$) (mean age 55) than those in the primary and non-caregiver groups (mean ages 57 and 59, respectively). For educational attainment, 18% had less than a high school education, 32% had completed high school, and 50% had some education beyond high school, including 11% with college degrees. Across groups, 47% were employed full or part time. There were no between-group differences in education, marital status, or employment.

Caregiver group comparisons

There were significant differences between groups in intra-family strain: primary caregivers reported the most strain (Table 1); there were no differences in the family life stresses summary score. There were significant differences between grandmother caregiver groups on specific family life stresses (MANOVA $F(12, 958) = 4.10, p < .001$). Post-hoc tests (Table 1) showed that non-caregivers reported fewer financial strains than primary and multigenerational grandmothers, and primary caregivers reported significantly more family legal problems. Multigenerational grandmothers reported more transitions than primary caregivers. There were no significant between-group differences on family-care strains, loss, or pregnancy strain. There were significant between-group differences in support, but not resourcefulness. Non-caregivers reported more subjective support than primary caregivers. Grandmothers in multigenerational homes reported the most instrumental support and primary caregivers reported the least. Primary caregivers reported higher depressive symptoms than grandmothers in the other two groups.

Multiple Regressions

For the full sample, intra-family strain accounted for 23% variance in depressive symptoms (Table 2); in Model 2, less subjective support and resourcefulness contributed to more depressive symptoms, while family life stresses became significant. In Model 3 (adjusted $R^2 = .46$), more family life stresses and intra-family strain, less subjective support and resourcefulness, and being younger, unemployed or not living in a multigenerational home contributed to more depressive symptoms. In Model 4 (adjusted $R^2 = .47$), family life stresses, intra-family strain, resourcefulness and subjective support remained significant, as did work, age and not being a multigenerational caregiver. There were no significant moderating effects.

For primary caregiver grandmothers (Model 1), greater intra-family strain contributed to depressive symptoms, but when resourcefulness and support were added, family life stresses became significant, and the effects of intra-family strain were reduced. When covariates were added (Model 3), more family life stresses and intra-family strain, but less resourcefulness and support contributed to greater depressive symptoms, as did unemployment and younger age, explaining 53% variance. In Model 4, when interaction terms were added (adjusted $R^2 = .54$), strain X subjective support ($\beta = -.17, t = -2.05, p < .05$) and events X instrumental support ($\beta = -.15, t = -1.96, p = .05$) were significant, eliminating the main effects of instrumental support. Low instrumental support with high levels of family life stresses contributed to high depressive symptoms; low subjective support under high strain contributed to high depressive symptoms.

For grandmothers in multigenerational homes, Model 1 shows that greater intra-family strain and family life stresses contributed to more depressive symptoms. As shown in Model 2, greater subjective support and resourcefulness reduced the effects of intra-family strain and family life stresses on depressive symptoms. When demographic covariates were added (Model 3), none were statistically significant at $p < .05$ but they reduced the effects of subjective support and contributed to an overall adjusted R^2 of .33. There were no significant moderating effects.

For non-caregivers, intra-family strain contributed to depressive symptoms, but greater subjective support and resourcefulness (Model 2) reduced depressive symptoms. In Model 3, grandmothers who were unemployed and younger had more depressive symptoms (adjusted $R^2 = .43$). When moderating effects were entered, intra-family strain became non-significant, but less subjective support and resourcefulness, being unemployed and younger contributed to more depressive symptoms, yielding adjusted $R^2 = .45$. There were no significant moderating effects.

Discussion

This study examined differences in family life stresses and strains and depressive symptoms in grandmothers by caregiving status to grandchildren, and the main and moderating effects of support and resourcefulness in this relationship. Grandmothers in the three caregiving groups differed in family stresses and strain, subjective and instrumental support, and depressive symptoms but not resourcefulness. As hypothesized, less family stress and strain, and greater support and resourcefulness contributed to better mental health across caregiver groups, although family life stresses did not contribute to depressive symptoms for the non-caregiver group.

Primary caregiver grandmothers had more depressive symptoms than multigenerational and non-caregivers, consistent with others' findings that raising grandchildren has a greater toll on mental health than co-residing and having a supplementary caregiving role (Blustein et al., 2004; Fuller-Thomas & Minkler, 2001). However, in the full sample, primary caregiving did not have a role in explaining depressive symptoms when stress, support and demographics were controlled, a result not unlike that of Hughes and colleagues (2007), whose longitudinal analysis concluded that primary caregiver grandparents are more depressed before caregiving. Although primary grandmothers were more depressed than non-caregivers in this report of baseline depression, we do not know whether these differences existed prior to assuming caregiving roles. Since this is the first wave of a longitudinal study, we will examine these effects over time.

Our interest in examining the contribution of specific stresses to depressive symptoms was less fruitful than originally anticipated. Preliminary analyses showed significant correlations between the specific life stresses, except pregnancy strain, with depressive symptoms (such as, .12 for loss, .32 for legal issues and .48 for intra-family strain). In subsequent analyses, when the specific life stress subscales were used in regression equations, intra-family strain was significant in explaining depressive symptoms for all grandmothers, but the other stress subscales were not, with the exception of legal issues for primary caregivers. Low reliability of the specific subscales may have been a factor, thus, we created a family life stress subscale with adequate reliability to represent typical family life stresses and that complements the intra-family strain subscale.

There were no statistically significant differences between grandmother groups in the overall family life stresses summary scores, however there were differences between groups in specific life stresses. Grandmothers in multigenerational homes reported more family transitions than primary caregiver grandmothers. Although some multigenerational homes may be relatively stable in composition, particularly among Hispanic and Asian families, these arrangements are less common for white or non-ethnic families (Simmons & Dye, 2003). In our study, some grandmothers living in multigenerational homes said the living arrangement was longstanding, but others indicated that it was a more temporary situation in response to family problems. Some grandmothers, especially those in multigenerational homes, described somewhat of a "revolving door" where family and friends, as well as adult children and grandchildren, move in and out (Standing et al., 2007) when needed. This safety net to help immediate and extended family represents a central function of the family (McCubbin et al, 1996), but there is little understanding of the extent of such moves or the overall effects on grandmothers. These patterns, especially changes in caregiving status, are tracked in the ongoing study.

Both primary and multigenerational caregivers reported more intra-family strain than non-caregivers, which reflects the more complex family situations in these homes. In addition to the practical challenges of coordinating the daily schedules of children with one or more generations of adults, caregiving grandmothers may face more relationship strains: lack of

privacy, less discretionary time, and conflicts with birth parents (Butler & Zakari, 2005). Further, primary caregivers also reported more family legal problems, specifically incidents of physical aggression within the family, a family member going to jail, or a teenager who ran away. Some stresses reflect reasons for primary caregiving and underscore the difficult situations that many primary caregiver grandmothers face on a daily basis. Given that strain was the most important factor in explaining depressive symptoms, finding ways to help grandmothers manage strain may be a key to better mental health. Nurses and other health care providers must recognize the prevalence of grandmother caregiving and the scope of caregiving stresses. General health assessments of women should include questions about family composition, family stresses and strains, and the availability of formal and informal support, with referrals as appropriate (Dowdell, 2007). If providers can assist grandmother caregivers to identify, prioritize and problem-solve around major issues, they may feel more supported and resourceful (Zauszniewski, Eggenchwiler, Preechawong, Roberts, & Morris, 2006).

We found that resourcefulness was a significant predictor of mental health in all three groups of grandmothers and in the total sample. Grandmothers who were more resourceful in performing daily activities despite disruption or adversity (redressive self-control), in adopting new and more effective methods for managing daily activities or coping with adversity (reformative self-control), and in maintaining a belief in their coping effectiveness (perceived self-efficacy) reported fewer depressive symptoms. Given this, interventions to bolster resourcefulness may be beneficial. For example, encouraging women to use more positive self-statements and recalling past successes in difficult situations are simple exercises that can strengthen an individual's resourcefulness skills (Zauszniewski, et al., 2006).

The role of subjective support in reducing depressive symptoms is consistent with other studies (Musil & Ahmad, 2002; Gerard et al., 2006), and, in addition to main effects, we found moderating effects for primary caregivers: subjective support was especially useful in offsetting the effects of high intra-family strain. Extended family is the main source of support for many grandmother caregivers, who often report little time for leisure and socialization (Butler & Zakari, 2005). Further, instrumental support buffered the effects of life events. Given the unique challenges faced by grandparents raising grandchildren, identifying factors that contribute to better mental health is critical (Hayslip & Kaminski, 2005). Those with a network of available and responsive support are better off, but the challenge remains in helping those with less assistance and resources. The role of instrumental support, especially during times of life changes and events, is highlighted by these findings. As Leder, Grinstead and Torres (2007) note, many grandmothers raising grandchildren benefit from support groups, but instrumental support in the form of assistance with childrearing and finances is lacking. Although we did not test informal support compared to formal support, helping grandmothers to maintain supportive relationships appears essential to their mental health.

Race did not contribute to depressive symptoms when other factors were controlled, although in preliminary analyses, grandmothers of color reported more stressful family life events and depressive symptoms than white grandmothers. These associations are consistent with other research that suggests women of color may be exposed to more stressful life events, in part due to socioeconomic inequality and disadvantage (Turner & Avison, 2003). We also hypothesized that unmarried grandmothers would have more depressive symptoms, primarily due to less readily available support, but marital status did not reduce depressive symptoms when other factors were considered. As in other studies, employment was related to better mental health (Sands & Goldberg-Glen, 1998).

Strengths of the study were the fairly robust sample size of grandmothers and the examination of grandmothers' mental health for three distinctive grandchild caregiving arrangements. Another strength is the random selection of the multigenerational and non-caregiver groups,

and although 11 grandmothers in the multigenerational group were identified by supplemental sampling, we retained them given the challenge of finding women in this group to participate. We also used convenience sampling to supplement the primary caregiver group because efforts to obtain a completely random sample of this group became cost-prohibitive. Since the sample was mostly Caucasian and African American, the experiences of grandmothers in other ethnic or racial groups, such as Native Americans, may be underrepresented.

The results highlight the importance of resourcefulness and support from family and friends for grandmothers, particularly for primary caregivers, who are at the most risk for poor mental health. We did not consider formal support as a separate mechanism, although it may be an important resource for many grandmothers. For example, one primary caregiver study participant wrote to us expressing her dismay that her community support group lost funding and was no longer available; this grandmother had counted on this resource and the support it provided. Future research is needed to explore ways to increase support for caregiving grandmothers, and because primary caregivers are more likely to be women of color, attention to interventions that are culturally specific is warranted.

The results of this study add to the body of literature on the types of stresses faced by grandmothers relative to their caregiving to grandchildren. While there are differences across caregiving groups in terms of stresses, strain and depression, the similar effects of support and resourcefulness on mental health provide encouraging evidence for designing interventions to maintain and improve the well-being of women caregivers.

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Table 1

Means, Standard Deviations and ANOVA Results by Caregiver Group

Variables	Primary n=183	Multigenerational n=136	Non-Caregiver n=167	F-test
Intra-family Strain	4.4 (2.8)	3.9 (2.9)	2.7 (2.3)	18.4 ^{a,b***}
Family Life Stress ^l	5.2(3.2)	5.4 (3.1)	4.6 (2.9)	4.1
Financial	1.2(.8)	1.1 (.8)	.9 (.8)	5.8 ^{a,b*}
Transitions	1.7 (1.5)	2.3 (1.7)	1.9 (1.5)	4.7 ^{c**}
Family Legal	.7 (.9)	.4 (.7)	.4 (.7)	9.9 ^{a,c***}
Family Loss	.7 (.7)	.7 (.7)	.6 (.7)	.2
Family Care	.8 (1.1)	.8 (1.0)	.7 (1.0)	.2
Pregnancy	.07(.2)	.06(.2)	.04(.2)	2.0
Support				
Instrumental	7.7 (3.4)	9.7 (2.2)	8.6 (2.8)	19.2 ^{a,b,c***}
Subjective	11.1 (3.1)	11.8 (2.4)	12.2 (2.6)	7.9 ^{a***}
Resourcefulness	3.2 (.6)	3.2 (.6)	3.3 (.6)	2.2
Depressive Symptoms	15.8 (11.3)	12.4 (10.4)	11.5(10.6)	8.4 ^{a,b***}

^l Aggregate of Family Life Stresses^a Difference between Primary and Non-Caregivers.^b Difference between Multigenerational and Non-Caregivers.^c Difference between Primary and Multigenerational Caregivers.

* p ≤ .05.

** p < .01.

*** p < .001.

Table 2
 Hierarchical Regressions of Depressive Symptoms for Total Sample and by Grandmother Group

Variable	Total Sample (N=486)			Primary Caregivers (n=183)			Multigenerational Caregivers (n=136)			Non-Caregivers (n=167)			
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Family stresses and strains													
Intra-family strain	.44***	.25***	.26***	.45***	.28***	.30***	.29***	.35***	.25**	.25**	.39***	.18*	.18*
Family life stresses	.08	.11*	.10*	.11	.15***	.14*	.13*	.24**	.21*	.18*	-.03	0.01	0.01
Subjective support		-.39***	-.35***		-.43***	-.38***	-.36***		-.17	-.17	-.49***	-.42***	
Instrumental support		-.04	-.06		-.11	-.12*	-.10		.07	.02	.12	.08	
Resourcefulness		-.15***	-.16***		-.15**	-.18**	-.20**		-.19*	-.19*	-.19**	-.15*	
Covariates													
Employed			-.18***			-.14*	-.15*			-.14		-.26***	
Married			-.07			-.03	-.04			-.07		-.09	
White			-.04			-.03	-.03			-.04		-.03	
GM age			-.11**			-.11*	-.11*			-.12		-.17*	
Multigenerational			-.08*										
Primary			-.02										
Interaction terms													
Strain × Resourcefulness													
Strain × Instrumental													
Strain × Subjective													
Stress × Resourcefulness													
Stress × Instrumental													
Stress × Subjective													
Adjusted R ²	.23	.43	.46	.26	.52	.53	.54	.26	.32	.33	.14	.38	.43

Note:

* $p \leq .05$;

** p<.01;
*** p<.001;

^aModel 4 for primary caregivers added to show moderating effects